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Perceptions of Social Loafing in Online Learning Groups: A study of Public University and U.S. Naval War College students

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Abstract

Social loafing research has spanned several decades and fields of study. Research has provided support for both the existence of social loafing and its antecedents within the laboratory, classroom, and work place. Studies regarding the perceptions of social loafing and its effects in the online learning environment, however, are largely non-existent. This study surveyed 227 online learning students who were participating in online learning groups. The study seeks to determine whether the perception of social loafing exists within online learning groups. In addition, several psychosocial factors identified in face-to-face environments are analyzed to determine their impact in online learning groups. Evidence supports both the perception of social loafing in online learning groups as well as similarities between social loafing antecedents in face-to-face groups and those in the online learning environment.

Keywords: Social loafing; free riding; task visibility; contribution; distributive justice; procedural justice; dominance; sucker effect; sucker role; online learning

Introduction

Virtual groups are becoming a common component of both the corporate and educational structure. Social organizations, corporations, and government associations are increasingly turning to virtual groups to bridge the gap between face-to-face interactions and difficulties associated with temporal and geographical separation (Bradner, 2003). Proponents of group work purport that students can participate in the active construction of knowledge, enhance problem solving skills, share ideas and opinions, gain valuable experience (Haythornthwaite, 2006), and learn valuable lessons regarding group communication and problem solving that are easily transferable to the work environment (Becker & Dwyer, 1998; Black, 2002).

As the demand for online learning has expanded in recent years, technology and course design advances have allowed educators to incorporate many of the best face-to-face course practices

into the online environment. Research suggests that teamwork in combination with asynchronous learning networks (ALN) may significantly increase learning perceptions, problem solving skills, and help students achieve a higher level of learning than individual learning (Hiltz, Coppola, Rotter & Turoff, 1999). Computer mediated communication (CMC) provides the ability to collaborate, exchange ideas, solve problems, share experiences, opinions and resources (Hiltz, 1998; McConnell, 2000; Stacey, 1999; Collins & Berge, 1996).

Although online education holds the promise of exciting and unique opportunities for learning, these opportunities do not come without challenges. Distance learning literature has indicated the existence of both social and individual difficulties associated with the online environment (Ragoonaden & Bordeleau, 2000; Curtis, 2001; Ardichvili, Page & Wentling, 2003; Forrest & Miller, 2003; Naquin & Tynan, 2003; Allen & Hecht, 2004; Paulus & Van der Zee, 2004; Gillespie, Rosamond & Thomas, 2006). Although distance education courses are increasingly incorporating various versions of cooperative and collaborative learning exercises, these group activities do not always meet with great student appeal or result in the higher learning expectations of the designers (Mason, 1998). Group work requires increased time and dependence on others which is often in direct conflict with student perceptions of distance education and online learning. In fact, group work presents a set of problems for students that include, but are not limited to, non-contributing group members, unequal workload, scheduling, and personal/ social conflicts between group members (Becker & Dwyer, 1998).

Review of Literature

Although initial efforts to incorporate group work into distance education primarily utilized threaded discussion boards, recent instructional design and technology improvements now make intricate group projects more plausible. As online group interactions become more complex, however, so does the intricacy of group interactions and their associated difficulties. Common group work problems may include poor communication, task allocation (Steiner, 1972), distribution of resources, decision making (Janis, 1982), motivation (Parks & Sanna, 1999), productivity (Allport, 1924; Zajonc, 1966), process loss (Steiner, 1972), and individual behaviors that include shirking, lurking (Palloff & Pratt, 2003; Salmon, Giles & Allen, 1997; Rovai, 2000; Nonnecke & Preece, 1999; Nonnecke & Preece, 2003; Schlosser, 2005), dominance, aggression (Michaelsen, Fink & Knight, 1997), social loafing (Moede, 1927; Dashiell, 1930; Kravitz & Martin, 1986), and free riding (Albanese & Van Fleet, 1985; Jones, 1984).

Social Loafing

Social loafing is the tendency to reduce individual effort when working in groups compared to the individual effort expended when working alone (Williams & Karau, 1991). At the opposite end of the spectrum from social loafing is social facilitation. Social facilitation is the concept that people often perform better in the presence of others than alone (Cook, 2001). This history of social loafing can be traced back to the work of Max Ringelmann in 1913. Ringelmann was a French agricultural engineer interested in determining the efficiency of animals, men, and machines in various agricultural applications (Kravitz & Martin, 1986). During experiments he conducted with his students and a group of prisoners, Ringelmann observed an inverse relationship between the size of the team and the effort expended. Subsequently, this relationship is coined the *Ringelmann Effect*.

In his 1913 publication, Ringelmann described several experiments (Kravitz & Martin, 1986). In a rope pulling experiment, Ringelmann noted that as the number of group members was

increased, there was a decrease in overall performance. In another experiment where prisoners provided motive power for a flourmill, he reported that as more men were added, each man began to rely on his neighbor to furnish the desired effort. Some prisoners became content to let their hand follow the crank and some went as far as letting the crank pull their hand. Although Ringelmann attributed the reduction in effort to motivational loss, his primary interest was examining process loss. It was many years before there was a renewed interest in Ringelmann's research. In fact, the term social loafing, to describe the concept of reducing one's work in groups compared to working alone, did not exist until 1979 when Latane, Williams, and Harkins (1979) first coined it.

Extensive research is available on the phenomenon of social loafing in the laboratory, face-to-face classroom, and the workplace. Research regarding social loafing in the online environment, however, is relatively sparse. Antecedents to social loafing identified in the face-to-face literature such as task visibility, individual contribution, and dominance become more difficult to control in the online learning environment. In addition, distance learning issues such as geographical separation, lack of visual cues, work schedules, and time zone differences may also exacerbate perceptions of social loafing in online learning groups.

Although it may be tempting to assume that social loafing perceptions exist in online learning based on the classroom evidence and complicating factors of the online learning environment, researchers must resist the urge to make this leap without first confirming its existence via constructive research. This study seeks to increase the understanding of social loafing in the online learning group by first determining whether the perception of social loafing and its antecedents exist in the minds of students participating in the online learning environment.

Social Loafing Research: This study

Personal Degree of Social Loafing

Perceived social loafing refers to the extent that group members believe that other group members are engaging in social loafing (Comer, 1995). It is important to note that each group member can only perceive what other group members are doing for project contribution. One member may struggle with the assigned concept, spend many hours of individual effort, actually learn a great deal and yet contribute less than others to the group output. This is especially true when the members do the assigned project work outside a face-to-face setting. Research concludes that group members will base their actions on the *perceived* actions of their fellow group members whether or not they are actually occurring (Mulvey & Klein, 1998). The mere perception of social loafing, whether accurate or not, may result in negative effects on group members' motivation and result in social loafing (Mulvey & Klein, 1998). Real group work and learning may therefore occur, but members of the group perceive unequal effort. Once members of a group perceive that some group members may be either taking over the project or stepping back from the project, it may affect their personal contributions. The act of group members carrying a free rider or social loafer has been termed playing the *sucker role*. Avoiding playing the sucker role by reducing one's individual effort has been termed the *sucker effect* (Kerr, 1983). Although research asserts a strong perception of social loafing in the classroom, laboratory, and work place (Karau & Williams, 1993; Hardy & Latane, 1986; Williams, Harkins & Latane, 1981; Comer, 1995), there has been little research on the perception of social loafing in the online learning environment. Prior to investigating the impact of social loafing in the distributive learning environment, it becomes imperative to determine whether the perception of social loafing actually exists in online students. In order to study this, the following Hypothesis was established and tested.

Hypothesis 1: The perception of social loafing exists within online learning groups.

Individual Task Visibility

Kidwell and Bennett (1993) have defined *task visibility* as the belief that a supervisor is observing one's individual efforts. Increased task interdependence in group work decreases task visibility due to increased difficulty in monitoring individual contributions of group members (Jones, 1984). When individual contributions are indistinguishable from the collective, individuals are no longer able to demonstrate their personal contributions and claim the benefits associated with these contributions (Jones, 1984). In addition, high contributing individuals may be working in groups with individuals who are not contributing adequately to the group effort but not suffering consequences. For the students who participate fully, this could result in feelings of inequity and lead to social loafing.

Conversely, those not fully contributing may social loaf because they perceive that their work is not critical for the group project's overall success (Karau & Williams, 1993), perceive an inequitable relationship (Walster, Berscheid & Walster, 1973), believe benefits outweigh the cost (Murphy, Wayne, Liden & Erdogen, 2003), or are intentionally free riding. *Free riding* occurs when an individual does not bear a proportional amount of the work and yet shares the benefits of the group (Albanese & Van Fleet, 1985; Jones, 1984). To test and see if task visibility effects social loafing in the online setting the following hypothesis was developed and tested.

Hypothesis 2: Perception of decreased individual task visibility increases the occurrence of perceived social loafing among group members.

Distributive Justice

Distributive justice is an individual's perception of the distribution of rewards or compensation among group members (Liden, Wayne, Jaworski & Bennett, 2004). The perceived fairness of the procedures and policies used to make decisions is termed *procedural justice* (Greenberg, 1990). Individual task achievement, when participating in group activities, can be influenced by a student's perception of the procedural and distributive justice established by administration or an instructor. Kidwell and Bennett (1993) proposed that an individual might alter their individual work effort if there is a perception of unfair distribution of rewards. Research indicates there is a significant correlation between procedural justice and social loafing; and individual's perception of the fairness in distribution procedures may influence the individual's effort on group projects (Liden et al., 2004; Karau & Williams, 1993). There is a large body of research on equity theory in support of these assumptions (Leventhal, Weiss & Long, 1969; Adams & Rosenbaum, 1962; Cook & Hegtvedt, 1983). Equity theory proposes that individuals will continually seek equitable relationships. If an individual discovers that a particular situation is inequitable, they will experience stress. Individuals will attempt to alleviate this stress by attempting to restore equity to the relationship. Research suggests that individuals may seek to restore the actual equity, or if unable, will seek to restore psychological equity (Walster, Berscheid & Walster, 1973). The individual may attempt to restore actual equity by reducing or increasing inputs, raising individual outcomes, or even by more manipulative means such as theft or sabotage. Individuals may attempt to restore psychological equity by denigrating the position of the other individual or

distorting the perception of individual inputs/ outputs. Negative aspects of this behavior can appear as negative comments/ opinions of others and justification of poor opinions and treatment (Walster, Berscheid & Walster, 1973). Hypothesis 3 examines whether perceptions of distributive justice contributed to online social loafing.

> Hypothesis 3: There is negative correlation between positive perceptions of distributive justice and social loafing in online learning groups.

Dominance, Aggression, and Individual Contributions

In any group project, personalities of participants should be part of the design considerations. Without any restrictions in project design, it can be expected that stronger personality types will naturally move into positions where they are most comfortable. Problems exist when any individual inappropriately uses their position, status, or strong personality to dominate, intimidate, or harass fellow group members. The dynamics of this behavior on more reserved members can be a decrease in participation due to a feeling of intimidation (Michaelsen, Fink & Knight, 1997). Palloff and Pratt (2003) suggest that rude or angry personal attacks on a classmate can have a negative influence on group dynamics in that the students report feeling unsafe, insecure, and inhibited in expressing their personal feelings and beliefs. One may believe that this kind of behavior would be far less prevalent in online classes than in face-to-face settings. Part of this perception may come from the fact that the group participants are not in direct contact with each other and therefore are not subject to physical attitudes that would support dominance attempts. Alternatively, this spatial separation may encourage some class members to engage freely in personal attacks or to seek dominant positions on the team.

Karau and Williams (1993) suggest that individuals will be unlikely to exert extraordinary effort unless they view their individual task within the group project as meaningful. When dividing the project into pieces identifying and assigning an easy task to a student will likely prejudice the student into believing that full effort is not required. Individuals will often withhold effort, seek to achieve personal rewards, and calculate ways to maximize benefits as long as they perceive that doing so will not affect their outcomes (Liden et al., 2004). Reducing a student's contribution to an unidentifiable piece of a project will negatively affect the desire of that contributor to do their best. If the individual effort becomes highly integrated into the group effort and rewards allocated accordingly, motivation may also suffer (Lawler, 1971). Dominant group members can manipulate an individual's perception of unique group contributions, intimidate them into believing their contributions are not necessary, and negatively influence their desire to contribute to the group project.

> Hypothesis 4: There is a negative correlation between individual contribution and dominance in online learning groups.

> Hypothesis 5: There is a positive correlation between self-reported social loafing and dominance in online learning groups.

Method

Participants

The participants were 227 (n = 174 male, n = 53 female) undergraduate and graduate students enrolled in online courses at either a major university in the southeast United States or in one of the U.S. Naval War College web-enabled courses. Participant ages ranged between 20 and 55 years of age (ages 20 to 30 = 44; ages 30 to 40 = 74; over age 40 = 106; 3 did not report their age).

Procedure

All participants were enrolled in an online course where they took part in a group project as part of the course. Since group projects were required for the online courses and served as the task examined, there is no constancy in project nature. Groups were naturally occurring and group size ranged from two to nine members. The complexity of the group assignment also varied across the courses. Each group had complete autonomy regarding individual and group goals, team member assignments, and group roles. Several courses required more than one group project within the course, but each participant completed their survey based upon their most recent group project. At the conclusion of their group project, each group member was asked to complete a Web-based survey to report their perceptions of: (a) degree to which their fellow group members participated in social loafing; (b) personal degree of social loafing; (c) individual task visibility; (d) individual contribution; (e) distributive justice; (f) sucker effect; and (g) group member dominance.

The Web-based survey consisted of 43 items and allowed for students to start and stop the survey at will while storing their results. Students had the option to complete the survey at more than one opportunity to encourage a higher completion rate. If participants had completed the survey at a prior time and attempted to complete a new survey, they would receive an electronic notification that they had previously completed the survey and the survey could not be completed a second time. Students who had not completed the survey at the end of their group projects were encouraged to do so at the end of the course.

Variables

Perceived group member loafing

This measure assesses the group member's perception of loafing in groups. Ten items adapted from George (1992) were used to assess perceived group member loafing. The scale asked participants to indicate their perception of how many of their group members possessed the characteristics listed in the ten items. Example items include, "Took it easy and let other students do the work" and "Did not do his or her fair share of the work."

Perceived individual loafing

This measure assesses the group members' personal perception of their own social loafing. The scale asked participants to indicate their agreement with ten statements about their personal behavior using a five-point Likert scale. Items were scaled 1 = strongly agree to 5 = strongly disagree, and were summed to form a composite (α = .96). These ten statements were adapted from George (1992). Example items include, "Did not do your fair share of the work" and "Left work for other group members that you should have completed."

Task visibility

This measure assesses the group member's perception of individual task visibility throughout the assignment. Group members were asked to indicate their agreement with six statements regarding task visibility using a five-point Likert scale. Items were scaled 1 = strongly agree to 5 = strongly disagree, and were summed to form a composite (α = .83). These six statements were adapted from George (1992). Example items include, "My instructor was aware of the amount of work I do" and "My instructor was generally aware of when a student was putting forth below average effort."

Contribution

This measure assesses the group member's perception of individual contributions to the group. Group members were asked to indicate their agreement with three statements regarding individual contributions using a five-point Likert scale. Items were scaled 1 = strongly agree to 5 = strongly disagree, and were summed to form a composite (α = .83). These three statements were adapted from George (1992). Example items include, "I think that I made a unique contribution to the success of our group" and "The success of the project hinged on students like myself."

Distributive justice

This measure assesses the group member's perception of distributive justice. Group members were asked to indicate their agreement with three statements regarding the fair distribution of rewards or compensation using a five-point Likert. Items were scaled 1 = strongly agree to 5 = strongly disagree, and were summed to form a composite (α = .83). These statements were adapted from Welbourne, Balkin and Gomez-Mejia (1995). Example items include, "My instructor was fair in rewarding my work considering the amount of effort I put into the work" and "Grades for individual group members were fair based on individual contributions."

Sucker effect

This measure assesses the group member's decrease in individual contributions in response to the perception of another member's decreased contributions. Group members were asked to indicate their agreement with four statements regarding individual participation in the sucker effect using a five-point Likert scale. Items were scaled 1 = strongly agree to 5 = strongly disagree, and were summed to form a composite (α = .79). These statements were adapted from Mulvey and Klein (1998). Example items include, "Because other group members were not contributing as much as they could, I did not try my best on the project" and "Was less likely to volunteer for tasks if another student was available to complete the task."

Dominance

This measure assesses the group member's perception of group member dominant behavior. Group members indicated their agreement with three statements regarding individual perception of group member dominance using a five-point Likert scale. Items were scaled 1 = strongly agree to 5 = strongly disagree, and were summed to form a composite (α = .76). Example items include, "When my group had an assertive/ dominant group member, I was more likely to put less effort into the group work" and "Assertive/ dominant group members intimidate me and cause me to defer tasks (for which I was responsible) to other group members."

Results

Descriptive statistics and correlations appear in Table 1 and 2 respectively. Of the 227 participants, 3.7 percent self-reported social loafing in groups. Only 2.1 percent of NWC (Naval War College) students self-reported social loafing, while 8.3 percent of the public university students self-reported social loafing. Self-reports of social loafing indicate that these individuals admitted to personally engaging in social loafing during their group activities. Of the 227 participants, 35.7 percent indicated the perception of other group members engaging in social loafing. Of the public university students, 77.4 percent reported the perception of other group members loafing, while only 8 percent of the NWC students reported the perception of others loafing.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
TaskVisibility	195	7	34	23.80	4.793
Contributions	221	6	15	10.83	2.042
SocLoafOthers	226	0	90	6.31	13.614
SocLoafSelf	191	9	36	16.73	6.909
SuckerEffect	193	7	15	10.16	1.571
Dominance	192	3	11	6.84	2.229
DistJustice	195	3	15	11.37	2.201
Valid N (listwise)	180				

Table 2. Correlations

	Task Visibility	Contributions	Social Loafing Others	Social Loafing Self	Sucker Effect	Dominance
Task Visibility						
Contributions	.080					
Social Loafing Others	-.125	.121				
Social Loafing Self	-.076	-.287(**)	.009			
Sucker Effect	-.173(*)	-.133	.150(*)	.786(**)		
Dominance	-.101	-.219(**)	.077	.500(**)	.609(**)	
Dist Justice	.434(**)	-.029	-.179(*)	-.262(**)	-.273(**)	-.145(*)

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Hypothesis 1: The perception of social loafing exists within online learning groups. Although a low percentage of NWC students perceived social loafing in their groups, 77.4 percent of public university students perceived social loafing. Since research suggests that the mere perception of social loafing within a group may decrease motivation and lead to others loafing (Mulvey &

Klein, 1998), even the smallest percentage of social loafing perception is reason for concern. The percentage of individuals perceiving social loafing in their online learning group therefore supports Hypothesis 1.

Hypothesis 2: Perception of decreased individual task visibility increases the occurrence of perceived social loafing among group members. No correlation was found between task visibility and perceived social loafing. As indicated in Table 1, however, a negative correlation ($r = -.173$, $N = 191$, $p < .05$) was found between task visibility and sucker effect. In addition, a positive correlation ($r = .434$, $N = 192$, $p < .01$) was found between task visibility and distributive justice. Although no evidence was found to support Hypothesis 2, there is evidence to suggest that as task visibility increases, avoidance of playing the sucker role will decrease. It also suggests that as task visibility increases, so does the perception of the fair and equitable distribution of awards.

Hypothesis 3: There is negative correlation between positive perceptions of distributive justice and social loafing in online learning groups. A negative correlation ($r = -.262$, $N = 188$, $p < .01$) is demonstrated between distributive justice and self-reported social loafing. There is also a negative correlation ($r = -.179$, $N = 194$, $p < .05$) between distributive justice and social loafing of others. These correlations suggest that as positive perceptions of distributive justice increase, social loafing decreases.

Hypothesis 4: There is a negative correlation between individual contribution and dominance in online learning groups. Table 1 indicates there is a negative correlation ($r = -.219$, $N = 191$, $p < .01$) between contribution and dominance. This suggests that as perceptions of dominance increase, individual contributions decrease.

Hypothesis 5: There is a positive correlation between self-reported social loafing and dominance in online learning groups. Table 1 indicates a positive correlation ($r = .500$, $N = 186$, $p < .01$) between self-reported social loafing and dominance. This suggests that social loafing increases with the perception of group member's display of dominant behaviors within the group. These data support Hypothesis 5. A positive correlation was also found between dominance and sucker effect ($r = .609$, $N = 190$, $p < .01$). This suggests that as the perception of dominance increases within the group, members will increase their efforts to avoid playing the sucker role by reducing or withholding effort.

Table 1 also indicates a significant correlation ($r = .786$, $N = 188$, $p < .01$) between sucker effect and self-reported social loafing. These data suggest that as the perception of social loafing increases, so does the tendency of individuals to avoid playing the sucker role by reducing their individual effort.

Discussion

Hypothesis 1

Hypothesis 1 proposes that the perception of social loafing exists within online learning groups. Determining whether this perception exists was the primary purpose of this research. Of the 227 survey participants, 35.7 percent indicated a perception that other members of their group were social loafing. Approximately 8 percent of the Naval War College students and 77.4 percent of the public university students perceived the existence of social loafing within their online learning groups. Self-reported social loafing percentages were much lower for both groups. The Naval

War College students self-reported only 2.1 percent social loafing, while the public university students self-reported 8.3 percent. The lower percentage of self-reported social loafing is consistent with prior research. Karau and Williams (1993) propose that individuals may be unaware that they are social loafing or reluctant to admit that they have participated in social loafing.

The difference between the Naval War College students and the public university students was a surprising result that prompts further examination. Possible research questions should include whether differences in group size, group composition, and group assignment can account for the differences between these groups. Initial investigation does not indicate any significant differences between any of these issues that can account for the differences in group reporting. The Naval War College description of group work was consistent with assignments in the public sector.

Naval War College students participate in several group projects during their Web-enabled class time. One project divides the students into pairs and the pair examines a reading assigned by the professor. By exchanging papers with each other, the team determines to either support or refute the original author's position on an issue. In another project, a group of students (usually 4 to 6 in size) conducts a live chat session with the course professor where they attempt a critical analysis of a geo-political issue presented by the professor at the start of the session. In a third project, the teams are assigned a scenario and must work together to select future weapon systems that would be advantageous in this hypothetical conflict, and then explain the rationale of why the chosen systems would be the preferred options.

The public university students also participated in several group projects during the semester. The students participated in groups that ranged in size from two to five members. Members participated in online activities that included group presentations, paper reviews, computer projects, and instructional design projects. Unlike their Naval War College colleagues, the public sector students participated solely in asynchronous online sessions. Based on these descriptions, there was no evidence to suggest that differences between group assignments account for the difference in social loafing reporting. Future research, however, should seek to examine other possible differences between military students and their civilian counterparts.

Hypothesis 2

There is no evidence to suggest support for Hypothesis 2. Hypothesis 2 proposes that the perception of decreased individual task visibility increases the occurrence of perceived social loafing among group members. There was no significant correlation between either self-reported or perceived social loafing in others. The lack of correlation between self-reported loafing and task visibility may not be surprising considering the low expectation in the literature for individuals to self-report. The lack of correlation between perceived loafing of others and task visibility, however, is in conflict with prior research (Liden et al., 2004) and warrants further investigation.

Hypothesis 3

Hypothesis 3 proposes there is negative correlation between positive perceptions of distributive justice and social loafing in online learning groups. Table 1 displays the confirmation of a negative correlation. The result supports prior research (Liden et al., 2004) and suggests that as positive perceptions of reward distributions among individual members increase, the occurrence

of social loafing decreases. Ensuring that group members understand the procedures behind and the distribution of rewards can therefore have a definitive influence on group performance. If group members either misunderstand or perceive any injustice in the distribution of rewards, members may engage in social loafing in order to more equitably distribute the rewards among group members.

Hypothesis 4

Hypothesis 4 proposes a negative correlation between individual contribution and dominance in online learning groups. This hypothesis was supported. There is little research thus far on the effect of dominance on individual contributions within the group context. The research that has been conducted in this area, however, suggest that aggression and dominance in the group context may result in participants feeling intimidated (Michaelsen, Fink & Knight, 1997), unsafe, insecure, and inhibited (Palloff & Pratt, 2003). The Naval War College classes combine students of various services, rank, and experience. Some perceived dominance may exist because of normal military customs and cultural awareness. In the public university setting, dominance can occur due to individual differences in related job and life experience, age, knowledge, skills, and abilities.

Hypothesis 5

Hypothesis 5 proposes a positive correlation between self-reported social loafing and dominance in online learning groups. The results of this study indicate a positive correlation between self-reported social loafing and dominance. This suggests that dominance negatively affects individual participation in group activities. This supposition finds further support by the positive correlation between dominance and sucker effect. As indicated earlier, sucker effect is an individual's reduction in effort in order to avoid pulling the weight of a fellow group member.

Faculty and course designers should seriously consider the intent and composition of collaborative groups prior to implementation. Research on dominance and aggression indicates that inter-group interactions were significantly more aggressive than inter-individual (Meier & Hinsz, 2004). These researchers caution that although aggression is not automatic in group situations, caution should be exercised for potential harm. They also suggest that careful prior planning that includes appropriate emphasis on cooperative goals may result in positive outcomes and avoidance of aggressive behaviors.

Strengths, Limitations, and Suggestions for Future Research

This research study provides evidence to suggest that social loafing not only exists, but may also be prevalent in the online learning classroom. Problems, identified in previous studies of face-to-face classrooms, are similar to those found in this study of online group projects. Since the distance learning environment already must deal with other potential distracters for group activities (e.g., geographical distance, time zones, work schedules), the presence of social loafing can be an additional impediment to the effectiveness of group work in the online classroom.

Issues pertaining to sample selection, differences in online group activities and survey questions may limit the current study. First, although the study sample may reflect a larger population of online or distance learners, generalization may not be possible due to limitations of course

availability, researcher contacts, and respondent availability. Other limitations include the inability to manipulate group activity for consistency, randomly assign students to groups, or collect surveys from all members of each group. Still the inclusion of many groups reporting similar perceptions is considered valuable enough to include these differences in groups in one report rather than a report of only one class and thus a smaller sample. The surveys were not constructed in a manner to compare some demographic data, such as age and gender differences in the group responses. No examination could therefore be made for these personal factors.

It is unclear without further research how significantly this phenomenon actually impedes learning in online learning groups. If future research in online settings mirror the results of face-to-face groups however, it is imperative that online instructors and designers consider social loafing implications when designing online group work. Face-to-face research on task impairments indicates that although social loafing in collective groups tend to impair simple task achievement, the opposite is true for complex tasks (Jackson & Williams, 1985). Social loafing in collective groups therefore may not always be a bad thing. Jackson and Williams contend that under certain circumstances social loafing (i.e., working less hard) may result in reduced stress and subsequent improved performance. Instead of accepting social loafing as an inevitable or negative aspect of group work, instructors and designers should therefore focus on the conditions and antecedents that may lead to improved or impaired performance.

Specific attention should be given to influences on group performance that include group process, task typology, group size, administrative influence, and individual perceptions. Unless group members can successfully navigate each area, it is unlikely that group performance will be effective. Both instructors and designers should research similar psycho-social behaviors such as free riding, shirking, and lurking. These psycho-social behaviors have different antecedents and can be easily mistaken for social loafing. Faculty and course designers should consider how current online research into social presence and models such as Community of Inquiry can be adapted to capture and incorporate these psycho-social factors. Garrison, Anderson and Archer (2000) proposed a template that measures indicators of social presence that include emotions, communication, and group cohesion. These measures could be adapted and utilized to aid faculty in detecting social loafing antecedents.

Additionally, instructors and designers should consider how improved technology can assist in both facilitating and tracking group performance. Recent improvements in synchronous classroom technology (e.g., *Horizon, Wimba, Elluminate*), learning management system (LMS) extensions (e.g., learning objects, *Blackboard Building Blocks*), and collaborative software (e.g., *Google Docs, WiZiQ, Kaltura*) are designed to facilitate collaborative learning with improved tracking for faculty. It is important for individual group members, faculty, and administration to work together as a team to ensure that the entire system supports an environment in which successful goal achievement is possible.

Future research in this area should strive to study intact groups in large enrollment classes. Collecting data from all group members would allow group level analysis. Researchers should also consider including qualitative aspects to their research such as group member interviews and focus groups. Previous research utilizing qualitative analysis has yielded valuable information regarding group member perceptions and how these perceptions may influence future group interactions (Gillespie, Rosamond & Thomas, 2006). Perceptions could then be analyzed both within and between online groups. Other recommendations for future research include controls that would sift out the impact of closely related theories such as equity theory (Walster, Berscheid & Walster, 1973) and the differences between military students and their civilian counterparts. Differences examined might include job related education, military influence, military bearing,

motivation, desire to succeed, prior exposure to stressful group environments, and personality traits.

One should not assume that merely because social loafing exists in face-to-face and online courses that the solutions in one setting will be the same in the other. It is therefore incumbent upon distance education researchers to further study the phenomenon of social loafing in distance learning environments and attempt to uncover ways to mitigate, facilitate, or eliminate the phenomenon of social loafing.

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References

Adams, J. S., & Rosenbaum, W. B. (1962). The relationship of worker productivity to cognitive dissonance about wage inequities. *Journal of Applied Psychology, 46*(3), 161-164.

Albanese, R., & Van Fleet, D. D. (1985). Rational behavior in groups: The free riding tendency. *Academy of Management Review, 10*(2), 244-255.

Allen, J. A., & Hecht, T. D. (2004). The 'romance of teams': Toward an understanding of its psychological underpinnings and implications. *Journal of Occupational and Organizational Psychology, 77*, 439-461.

Allport, F. H. (1924). *Social psychology.* Boston: Houghton Mifflin.

Ardichvili, A., Page, V., & Wentling, T. (2003). Motivation and barriers to participation in virtual knowledge-sharing communities of practice. *Journal of Knowledge Management,* 7(1), 64-77.

Becker, D., & Dwyer, M. (1998). The impact of student verbal/ visual learning style preference on implementing groupware in the classroom. Journal of Asynchronous Learning Networks, 2(2), 61-69. http://www.aln.org/publications/jaln/v2n2/v2n2_becker.asp

Black, G. (2002). Student assessment of virtual teams in an online management course. *Journal of Business Administration Online, 1*(2). http://jbao.atu.edu/Fall2002/black.pdf

Bradner, E. (2003). Computer mediated communication among teams: What are "teams" and how are they "virtual"? In C. Lueg & D. Fisher (Eds.), *From usenet to cowebs: Interacting with social information spaces* (pp. 135-154). London: Springer-Verlag.

Collins, M., & Berge, Z. (1996). *Facilitating interaction in computer mediated online courses*. Paper presented at the FSU/ AECT Distance Education Conference, June, Tallahassee FL. http://victorian.fortunecity.com/vangogh/555/dist-ed/roles.html

Comer, D. R. (1995). A model of social loafing in real work groups. *Human Relations, 48*(6), 647-667.

Cook, R. (2001). Social psychology in project management. *PM Forum: Connecting the world to project management website.* http://www.pmforum.org/library/papers/

Cook, K. S., & Hegtvedt, K. A. (1983). Distributive justice, equity, and equality. *Annual Review of Sociology*, 9, 217-241.

Curtis, D. D. (2001). Exploring collaborative online learning. *Journal of Asynchronous Learning Networks, 5*(1). http://www.sloan-c.org/publications/jaln/v5n1/v5n1_curtis.asp

Dashiell, J. F. (1930). An experimental analysis of some group effects. *Journal of Abnormal and Social Psychology, 25*, 190-199.

Forrest, K. D., & Miller, R. L. (2003). Not another group project: Why good teachers should care about bad group experiences. *Teaching of Psychology, 30*(3), 244-246.

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2-3), 87-105.

George, J. M. (1992). Extrinsic and intrinsic origins of perceived social loafing in organizations. *The Academy of Management Journal, 35*(1), 191-202.

Gillespie, D., Rosamond, S., & Thomas, E. (2006). Grouped out? Undergraduates' default strategies for participating in multiple small groups. *The Journal of General Education, 55*(2), 81-102.

Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. *Journal of Management, 16*(2), 399-342.

Hardy, C., & Latane, B. (1986). Social loafing on a cheering task. *Social Science, 77*, 165-172.

Haythornthwaite, C. (2006). Facilitating collaboration in online learning. *Journal of Asynchronous Learning Networks, 10*(1). http://www.sloan-c.org/publications/jaln/v10n1/v10n1_2haythornthwaite.asp

Hiltz, S. R. (1998). *Collaborative learning in asynchronous learning networks: Building learning communities*. Invited Address at WEB98 Orlando, November 1998. http://web.njit.edu/~hiltz/collaborative_learning_in_asynch.htm

Hiltz, S. R., Coppola, N., Rotter, N., & Turoff, M. (1999). Measuring the importance of Collaborative learning for the effectiveness of ALN: A multi-measure, multi-method approach. *Journal of Asynchronous Learning Networks, 4*(2). http://www.sloan-c.org/publications/jaln/v4n2/v4n2_hiltz.asp

Jackson, J. M., & Williams, K. D. (1985). Social loafing on difficult tasks: Working collectively can improve performance. *Journal of Personality and Social Psychology, 49*(4), 937-942.

Janis, L. L. (1982). *Groupthink: Psychological studies of policy decisions and fiasco.* Boston: Houghton Mifflin.

Jones, G. R. (1984). Task visibility, free riding, and shirking: Explaining the effect of structure and technology on employee behavior. *Academy of Management Review, 9*(4), 684-695. http://www.jstor.org/view/03637425/ap010036/01a00100/0

Karau, S. J., & Williams, K. D. (1993). Social loafing: A meta-analytic review and theoretical integration. *Journal of Personality and Social Psychology, 65*(4), 681-706.

Kerr, N. L. (1983). Motivation losses in small groups: A social dilemma analysis. *Personality and Social Psychology, 45*, 819-828.

Kidwell, R. E., & Bennett, N. (1993). Employee propensity to withhold effort: A conceptual model to intersect three avenues of research. *Academy of Management Review, 18*(3), 429-456. http://www.jstor.org/view/03637425/ap010071/01a00030/0

Kravitz, D. A., & Martin, B. (1986). Ringelmann rediscovered: The original article. *Journal of Personality and Social Psychology, 50*(5), 936-941.

Latane, B., Williams, K., & Harkins, S. (1979). Many hands make light the work: The causes and consequences of social loafing. *Journal of Personality and Social Psychology*, 37, 822-832.

Lawler, E. E. (1971). *Pay and organizational effectiveness: A psychological view*. New York: McGraw-Hill.

Leventhal, G. S., Weiss, T., & Long, G. (1969). Equity, reciprocity and reallocating rewards in the dyad. *Journal of Personality and Social Psycholo*gy, *13*(4), 300-305.

Liden, R. C., Wayne, S. J., Jaworski, R. A., & Bennett, N. (2004). Social loafing: A field investigation. *Journal of Management, 30*(2), 285-304.

Mason, R. (1998). Models of online courses. *ALN Magazine, 2*(2). http://www.sloan-c.org/publications/magazine/v2n2/mason.asp

McConnell, D. (2000). *Implementing computer supported cooperative learning*. London: Kogan Page.

Meier, B. P., & Hinsz, V. B. (2004). A comparison of human aggression committed by groups and individuals: An interindividual-intergroup discontinuity. *Journal of Experimental and Social Psychology, 40*, 551-559.

Michaelsen, L. K., Fink, L. D., & Knight, A. (1997). Lessons for classroom teaching and faculty development. *University of Oklahoma, Program for Instructional Innovation.* http://www.ou.edu/idp/tips/ideas/groupact.html

Moede, W. (1927). Die Richtlinien der Leistungs-Psychologie [In German: Guidelines of performance psychology]. *Industrielle Psychotechnik, 4*, 193-209.

Mulvey, P. W., & Klein, H. J. (1998). The impact of perceived loafing and collective efficacy on group goal processes and group performance. *Organizational Behavior and Human Decision Processes, 74*(1), 62-87.

Murphy, S. M., Wayne, S. J., Liden, R. C., & Erdogan, B. (2003). Understanding social loafing: The role of justice perceptions and exchange relationships. *Human Relations, 56*(1), 61-84.

Naquin, C. E., & Tynan, R. O. (2003). The team halo effect: Why teams are not blamed for their failures. *Journal of Applied Psychology, 88*(2), 332-340.

Nonnecke, B., & Preece, J. (1999). Shedding light on lurkers in online communities. In K. Buckner (Ed.), Ethnographic studies in real and virtual environments: Inhabited information spaces and connected communities (pp. 123-128). *Paper presented at the Ethnographic Studies in Real and Virtual Environments: Inhabited Information Spaces and Connected Communities*. January, 24-26, Edinburgh.

Nonnecke, B., & Preece, J. (2003). Silent participants: Getting to know lurkers better. In C. Lueg & D. Fisher (Eds.), *From usenets to cowebs: Interacting with social information spaces* (pp. 110-132). New York: Springer.

Palloff, R. M. & Pratt, K. (2003). *Virtual student: A profile and guide to working with online learners*. San Francisco, CA.: Jossey-Bass.

Parks, C. D., & Sanna, L. J. (1999). *Group performance and interaction*. Boulder, CO.: Westview Press.

Paulus, P. B., & Van der Zee, K. (2004). Should there be a romance between teams and groups? *Journal of Occupational and Organizational Psychology, 77*, 475-480.

Ragoonaden, K., & Bordeleau, P. (2000). Collaborative learning via the internet. *Educational Technology & Society, 3*(3), 1436-4522.

Rovai, A. P. (2000). Building and sustaining community in asynchronous learning networks. *The Internet and Higher Education, 3*(4), 285-297.

Salmon, G., Giles, K., & Allen, J. (1997). Large-scale computer-mediated training for management teachers. *Information Research, 3*(1). http://informationr.net/ir/3-1/paper32.html

Schlosser, A. E. (2005). Posting versus lurking: Communicating in a multiple audience context. *Journal of Consumer Research, 32*(2), 260-265.

Stacey, E. (1999). Collaborative learning in an online environment. *Journal of Distance Education, 14*(2), 14-33.

Steiner, I. D. (1972). *Group process and productivity.* New York: Academic Press.

Walster, E., Berscheid, E., & Walster, G. W. (1973). New directions in equity research. *Journal of Personality and Social Psychology, 25*(2), 151-176.

Welbourne, T. M., Balkin, D. B., & Gomez-Mejia, L. R. (1995). Gainsharing and mutual monitoring: A combined agency-organizational justice interpretation. *The Academy of Management Journal, 38*(3), 881-899.

Williams, K., Harkins, S., & Latane, B. (1981). Identifiability as a deterrent to social loafing: Two cheering experiments. *Journal of Personality and Social Psychology, 40,* 303-311.

Williams, K. D., & Karau, S. J. (1991). Social loafing and social compensation: The effects of expectations of co-worker performance. *Journal of Personality and Social Psychology, 61*(4), 570-581.

Zajonc, R. B. (1966). *Social psychology: An experimental approach.* Belmont, CA.: BrooksCole.

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